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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO	
10/085,086	03/01/2002	Denis Gallant	12494-US	9111	
23553	7590 11/22/2005		EXAMINER		
MARKS & CLERK			TRAN, DZUNG D		
P.O. BOX 957 STATION B	,		ART UNIT	PAPER NUMBER	
OTTAWA, ON KIP 5S7			2638		
CANADA			DATE MAILED: 11/22/200:	DATE MAILED: 11/22/2005	

Please find below and/or attached an Office communication concerning this application or proceeding.

Application No.   Applicant(s)		( <b>K</b>							
### Examiner   Dzung D. Tran   2633		Application No.	Applicant(s)						
Dzung D. Tran   Z633		10/085,086	GALLANT ET AL.	(					
The MALING DATE of this communication-appears on the cover sheet with the correspondence address = Period for Repty  A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MALLING DATE OF THIS COMMUNICATION.  Betarlois of time may be available used the provided of 30 FR1 1386, in no event, however, may a largely be largely the sinely lead after 50 kg is MONTHS from the making did making the making did of this communication, were in furnely filled, may reduce any secret optical time making making the making did of this communication, were in furnely filled, may reduce any secret optical time making did of the communication, were in furnely filled, may reduce any secret optical time making the making did of the communication, were informed filled.  1) □ Responsive to communication (s) filled on 09 September 2005.  2a) □ This action is FINAL. 2b) □ This action is non-final.  3) □ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1936 C.D. 11, 453 O.G. 213.  Disposition of Claims  4) □ Claim(s) 1-12 and 1-5-18 is/are nejected.  7) □ Claim(s) 1-12 and 1-5-18 is/are nejected.  7) □ Claim(s) 1-12 and 1-5-18 is/are nejected.  7) □ Claim(s) 1-12 and 1-5-18 is/are nejected.  8) □ The specification is objected to by the Examiner.  Application Papers  9) □ The specification is objected to restriction and/or election requirement.  Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.86(a).  Replacement drawing is filled on	Office Action Summary	Examiner	Art Unit						
A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.  - Extensions of time may be available under the provisioner of 27% 1.13(a). In one event, however, may a rapity be firmely filed.  - Extensions of time may be available under the provisioner of 27% 1.13(b). In one event, however, may a rapity be firmely filed.  - If No period to reply is specified above, the maximum statutory period willagely and will expose (K) MONTH's from the realiting date of this communication.  - Failive to reply within the set or extended period for reply will, by statute, cause the application to become ARAHOONED (15 U S C. § 133). Any rays preceded by the Set of Set of PR 1.704(b).  - Status  1) □ Responsive to communication(s) filed on 09 September 2005.  2a) □ This action is FINAL.  - 2b) □ This action is non-final.  3) □ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11, 453 O.G. 213.  Disposition of Claims  4) □ Claim(s) 1-18 isfare pending in the application.  4a) □ Of the above claim(s) isfare withdrawn from consideration.  5□ □ Claim(s) israe allowed.  6) □ Claim(s) 13 and 14 isfare objected to.  8) □ Claim(s) 3 and 14 isfare objected to.  8) □ Claim(s) and 14 isfare objected to.  9) □ The specification is objected to by the Examiner.  10) □ The drawing(s) filed on isfare: a) □ accepted or b) □ objected to by the Examiner.  Application Papers  9) □ The specification is objected to by the Examiner. Note the attached Office Action or form PTO-152.  Priority under 35 U.S.C. § 119  12 □ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  a) □ All b) □ Some * c) □ None of:  1. □ Certified copies of the priority documents have been received.  2. □ Certified copies of the priority documents have been received in A		1 -							
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WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.  Extensions of time may be available under the positions of 37 RF1 1360, in no event. Neveries, may a reply be timely filled after 58 (8) MONTHS from the mailing date of this communication.  Failine for grow within the sid or cented period for reply with by the story explicitly of the property of t	• •	VIC CET TO EXDIDE 3 M	MONTH(S) OR THIRTY (30) D	AYS					
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#### **DETAILED ACTION**

## Specification

# Claim Rejections - 35 USC § 103

- 1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:
  - (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.
- 2. Claims 1, 2, 5-12, 15 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bala et al. U.S. patent no. 6,272,154 in view of Nygaard, jr U.S. patent no. 6,785,622.

Regarding claim 1, Bala taught an optical switch comprising:

means for recovery a data rate from an incoming serial signal (254a of figure 2, e.g., col. 6, lines 34-36);

means for monitoring signal quality of the incoming signal by monitoring the SONET overhead signal (254a of figure 2, e.g., col. 6, lines 43-44); and

means for providing data integrity across the transparent switching fabric by providing information on the identify and bit error rate (BER) of each signal (254a of figure 2, e.g., col. 6, lines 445-47). Bala differs from claim 1 of the present invention in that Bala does not specifically disclose using an ingress CDR to monitor data eye opening. Nygaard, jr discloses a logic analyzer for eye diagram (col. 2, line 66 to col. 3, line 39). Since it is well recognized in the art that BERT have been used to measure

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eye diagram or to generate eye diagram (col. 1, lines 29-35, col. 2, line 43) and since Bala discloses means for providing data integrity across the transparent switching fabric by providing information on the identify and bit error rate (BER) of each signal (254a of figure 2, e.g., col. 6, lines 445-47). At the time of the invention was made, it would have been obvious to a person of ordinary skill in the art to include the logic analyzer of Nygaard in the system of Bala for analyzing or monitoring the eye diagram (col. 3, lines 33-39 of Nygaard). One of ordinary skill in the art would have been motivated to do that in order to detect data integrity of the optical system.

Regarding claim 2, Bala taught the transparent data path is independent of input data rate (col. 3, lines 15-17).

Regarding claims 5-7, Bala discloses cross connect switch 255 for switching a signal across said switch without modifying the data signal (e.g. by monitoring the J0 and B1 bytes of the SONET overhead data and confirming the operation of the cross connect; col. 6, lines 21-33, 34-46. Thus, if it is not inherent, it would have been obvious that by monitoring the changing of the J0 and B1 bytes of the SONET overhead data and confirming the operation of the cross connect, Bala's reference does not adding data bit or changing data bits or deleting data bits. Furthermore, this supporting rational is based on a recognition that the claimed difference exist not as a result of an attempt by applicant to solve a problem but merely amounts to selection of expedients known to the artisan of ordinary skill as design choices.

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Regarding claim 8, Bala taught the transparent data path having means to extract layer 1 performance data from the incoming signal (e.g. CDR extract the SONET section trace over head bytes, col. 10, lines 51-53).

Regarding claim 9, as far as examiner understood, Bala taught the transparent data path having means to extract layer 1 and layer 2 performance data from the incoming signal (e.g. CDR extract the SONET section trace over head bytes (e.g. layer 1) and the section BIP-8 violations (e.g. layer 2), col. 10, lines 51-53).

Regarding claim 10, Bala discloses transparent data path architecture having an active switching fabric plane and a back-up switching fabric plane (figure 2, col. 3, lines 21-22, col. 6, lines 29-33).

Regarding claim 11, Bala discloses the data and clock recovery (CDR) 254a, 254b connected to each of switch 255a, 255b for providing data integrity across the transparent switching fabric by providing information on the identify and bit error rate (BER) of each signal (col. 6, lines 45-47).

Regarding claims 12 and 18, Bala discloses means to select between said active switching plane and said back-up switching plane based on quality of data integrity between said switching fabric planes (col. 11, lines 36-65).

Regarding claim 15, Bala taught an optical switch comprising method of providing data integrity of serial data signal through a transparent data path architecture of an optical-electrical-optical (OEO) switch, the method comprising:

providing means to recover a data rate from said incoming serial data signal (col. 6, lines 34-36);

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providing means to switch a signal across a switching fabric, the switching fabric including an active fabric and a back-up fabric (col. 6, lines 29-33);

monitoring signal quality of the incoming signal by monitoring the JO and B1 bytes of the SONET overhead signal (254a of figure 2, e.g., col. 6, lines 43-44); and providing data integrity across the transparent switching fabric by providing information on the identify and bit error rate (BER) of each signal and selecting the signal across respective switching fabrics having a higher signal quality (254a of figure 2, e.g., col. 6, lines 445-47) and the transparent data path is independent of input data rate (col. 3, lines 15-17). Bala differs from claim 15 of the present invention in that Bala does not specifically disclose using an ingress CDR to monitor data eye opening. Nygaard, jr discloses a logic analyzer for eye diagram (col. 2, line 66 to col. 3, line 39). Since it is well recognized in the art that BERT have been used to measure eye diagram or to generate eye diagram (col. 1, lines 29-35, col. 2, line 43) and since Bala discloses means for providing data integrity across the transparent switching fabric by providing information on the identify and bit error rate (BER) of each signal (254a of figure 2, e.g., col. 6, lines 445-47). At the time of the invention was made, it would have been obvious to a person of ordinary skill in the art to include the logic analyzer of Nygaard in the system of Bala for analyzing or monitoring the eye diagram (col. 3, lines 33-39 of Nygaard). One of ordinary skill in the art would have been motivated to do that in order to detect data integrity of the optical system.

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3. Claims 3, 4, 16 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bala et al. U,S. patent no. 6,272,154 in view of Nygaard, jr U.S. patent no. 6,785,622 and further in view of Halgren U.S. publication no. 2002/0105696.

Regarding claims 3 and 16, as per claims above, the combination of Bala and Nygaard, jr discloses all the limitations except for switching an incoming signal independent of data protocol. Halgren discloses a transparent optical —electrical-optical switch for switching an incoming signal independent of data rate (page 2, paragraph 0025) and data protocol (page 2, paragraph 0027). Since today optical communication network is lager (e.g. transmit optical signal over different data rate, for example OC-3, OC-12, OC-48) and interface with different data protocol (e.g. Ethernet, ATM, SONET and SDH protocols). At the time of the invention was made, it would have been obvious to a person of ordinary skill in the art to provide multi-protocol data recovery in the combination of Bala and Nygaard, jr invention since it is desirable to accommodate and interface with the growing number of optical fiber communication system use different protocols and different rates for increase flexibility and complexity of service.

Regarding claim 4, Bala taught a data and clock recovery (CDR) circuits 235a, 235b for recovering a data rate from an incoming signal is capable of recovering a data rate from a wide range of data rates (e.g. OC-3, OC-12 or OC-48) see col. 6, lines 39-42.

Regarding claim 17, Bala taught an optical switch comprising:

means for recovery a data rate from an incoming serial signal (254a of figure 2, e.g., col. 6, lines 34-36);

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means for extracting layer 1 and 2 performance data from the signal in a non-intrusive manner (col. 10, lines 51-53);

means for monitoring signal quality of the incoming signal by monitoring the JO and B1 bytes of the SONET overhead signal (254a of figure 2, e.g., col. 6, lines 43-44); and

means for providing data integrity across the transparent switching fabric by providing information on the identify and bit error rate (BER) of each signal (254a of figure 2, e.g., col. 6, lines 445-47). Bala differs from claim 17 of the present invention in that Bala does not disclose means for switching any signal, independent of data protocol. Halgren discloses a transparent optical -electrical-optical switch for switching a signal independent of data protocol (page 2, paragraph 0027). At the time of the invention was made, it would have been obvious to a person of ordinary skill in the art to provide multi-protocol data recovery in Bala invention since it is desirable to accommodate and interface with the growing number of optical fiber communication system use different protocols and different rates for increase flexibility and complexity of service.

4. Claims13 and 14 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

### Response to Arguments

5. Applicant's arguments with respect to claims 1-18 have been considered but are moot in view of the new ground(s) of rejection.

### Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dzung Tran whose telephone number is (571) 272-3025.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

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Supervisor, Vanderpuye Kenneth, can be reached on (571) 272-3078.

The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

Dzung Tran

11/16/2005

KENNETH VANDERPUYE
SUPERVISORY PATENT EXAMINER